

A Note on the Range of *Gastropteron pacificum*

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(1 Map)

INTRODUCTION

Gastropteron pacificum BERGH, 1894, belongs to the order

Cephalaspidea, a large opisthobranch group comprising 14 families and more than 150 genera and subgenera (TAYLOR & SOHL, 1962). Cephalaspideans are characterized by a cephalic shield, an expanded thickening of the dorsal surface of the head. This cephalic shield may possibly represent fused tentacle bases; in the cephalaspideans the tentacles are mostly absent, although the corners of the shield may be elongated into tentacle-like projections (HYMAN, 1967, p. 407). *Gastropteron* can form a temporary siphon by rolling the freely movable posterior margin of the cephalic shield into a tube (BERGH, 1894, p. 201).

When actively crawling, the general body form of the family Gastropteridae (containing the genera *Gastropteron* and *Sagaminopteron*) is an elongated cylindrical shape with paired lateral parapodia (continuous with the foot) turning up over the back, and with the prominent tail tapering back. By flapping the expanded parapodia the animal frequently swims through the water (BABA & TOKIOKA, 1965, p. 375, and HAEFELFINGER & KRESS, 1967). The radular formula of *Gastropteron* is 4-6 · 1 · 0 · 1 · 4-6 (BABA & TOKIOKA, *loc. cit.*).

Detailed descriptions and illustrations of the egg masses and veligers of *Gastropteron pacificum* are given by HURST (1967). The adult shell (illustrated in KEEN, 1963, p. 17) is reduced, almost vestigial, and completely enclosed within the mantle. The ground color of the adult is a pale yellow ochre, mottled with clusters of small red spots. A thorough description of the adult anatomy is given by MACFARLAND, (1966, pp. 2-6; plt. 1).

TOKIOKA & BABA (1964) summarize the known ranges and main references of the 5 described species of *Gastro-*

pteron prior to their establishment of 4 new species from Japan.

GEOGRAPHICAL DISTRIBUTION

The published range of distribution of *Gastropteron pacificum* consists of a rather scattered series of localities along the Pacific coast of western North America. Along most of the coast it is listed as a presumed offshore species, especially in the approximately 350 miles of coast between Monterey Bay and Newport Bay.

An offshore, pelagic species, it is not encountered by the tidepool collector of opisthobranchs. The relative scarcity of *G. pacificum* is attested to by the majority of negative responses the author received upon inquiries to collectors asking if they had ever caught this species or if they knew of any specimens in museum or private collections. The present note correlates previously published accounts of the range of distribution of *G. pacificum* with more recent data obtained by James Lance and by the Santa Barbara Museum of Natural History from the collecting of Pat Brophy and Shane Anderson, substantiating its occurrence along the southern California coast.

With one exception, the literature prior to the publication of MACFARLAND's (1966) monograph on the opisthobranchs of the Pacific coast of North America gives the range of *Gastropteron pacificum* as extending from the Aleutian Islands, Alaska, to the Fuca Strait (south of Vancouver Island, British Columbia, Canada): BERGH, 1894; DALL, 1921; OLDROYD, 1927; KEEN, 1937; BURCH, 1945; LA ROCQUE, 1953; ABBOTT, 1954. SMITH & GORDON (1948), however, mention the occurrence of this cephalaspidean in Monterey Bay (dredged, rare).

More recently, STEINBERG (1963) indicates *Gastropteron pacificum* along with numerous other cephalaspideans, as occurring between San Diego and Vancouver Island,

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Figure 1

Western Coastline of California

The localities are, from north to south: off San Francisco, Monterey Bay, Gaviota, Santa Barbara, Ventura, Newport Bay, and Point Loma.

but does not include specific localities. MACFARLAND (1966) records this species from the following localities: off San Francisco; in Monterey Bay; Newport Bay; and along the west coast of Central America from the Gulf of California to the Galápagos Islands. Specimens collected in the vicinity of Friday Harbor, Washington, were used by HURST (1967) in her detailed study of opisthobranch veligers. SPHON & LANCE (1968) do not discuss the occurrence of any cephalaspideans in their checklist for Santa Barbara County.

Gaps in the range of *Gastropeteron pacificum* occur between Fuca Strait and San Francisco, between Monterey and Newport Bays, and between Newport Bay and the Gulf of California. The following collecting data indicate the presence of *G. pacificum* in the latter two regions:

1. One specimen; in an otter trawl off Point Loma (San Diego), California, at approximately 100 fathoms. January 28, 1965. Collected by E. W. Fager of Scripps Institution of Oceanography and party [in the collection of James R. Lance].

2. One specimen; backwash of the filter system of the Undersea Gardens, Santa Barbara, California. January 24, 1968; collected by Shane Anderson, identified by Richard Lee (deposited in the collection of SBMNH, no. 25083).

3. Three specimens; Ventura, California, 85 fm. March 27, 1968. Collected by Pat Brophy, identified by Mrs. Jacque Rogers (one specimen in the collection of SBMNH no. 25084).

[The disposition of the remaining specimens, all collected by Pat Brophy, is unknown; data obtained through personal communication, J. R. Lance and P. Brophy.]

4. One specimen; Rincon, California (between Ventura and Santa Barbara), 50 fm. May 7, 1968.

5. One specimen; Santa Barbara, 105 fm. June 24, 1968.

6. One specimen; Gaviota, California, 106 fm. July 6, 1968.

7. Two specimens; Gaviota, California, 119 fm. July 29, 1968.

8. One specimen; Gaviota, California, 117 fm. July 30, 1968.

9. Two specimens; Santa Barbara, California, 130 fm. August 15, 1968.

10. Fourteen specimens; Santa Barbara, California, 12 miles offshore, 130 fm. August 16, 1968.

11. Ten specimens; Santa Barbara, California, 12 miles offshore, 123 fm. August 16, 1968.

12. Three specimens; Santa Barbara, California, 12 miles offshore, 134 fm. September 1, 1968.

The accompanying map indicates the subtidal localities along the California coast from which *Gastropeteron pacificum* has been collected.

With increased offshore collecting, specimens of *Gastropeteron pacificum* should be found throughout its entire range and, hopefully, more information will be gathered about the life history and distribution of this opisthobranch.

ACKNOWLEDGMENTS

Sincere thanks are extended to Pat Brophy and Shane Anderson for making available the material they collected; to James R. Lance for the San Diego locality record and his generous assistance during the preparation of this note; to Nelson Baker and Richard S. Lee of the Santa Barbara Museum of Natural History for allowing me to use the material in the SBMNH; and to the many persons who responded to my inquiry.

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